On page 8, please amend Table 1 as follows:

Table 1. Peptide sequences and their substrate specificity toward tissue TGase.

Peptide Sequence		$k_{cat}/K_{m,app}$*
	Ac-KG-NH_2	10.6
	FKG-NH_2	61.6
	LKG-NH_2	48.4
	DOPA-KG-NH_2	----
	Ac-FKG-NH_2	560
	Ac-LKG-NH_2	482
	DOPA-FKG-NH_2	1324
	DOPA-LKG-NH_2	1179
SEQ ID NO: 2	Ac-GQQQLG-NH_2	34.1
SEQ ID NO: 2	DOPA-GQQQLG-NH_2	47.9
SEQ ID NO: 3	NH_2-GQLKHLEQQEG-NH_2	47.3

*$min^{-1}mM^{-1}$. For details see Examples, below.

JDK 11/29

On page 8, please amend paragraphs 1 and 2 as follows:

More subtle differences were noted in the specificities of the acyl donor peptides, with all three designed Gln peptides exhibiting good substrate properties. It is interesting to note that the specificities of representative short peptides of this invention, Ac-(SEQ ID NO:2)GQQQLG-NH_2 and DOPA-(SEQ ID NO:2)GQQQLG-NH_2, compared favorably to the specificity of NH_2-(SEQ ID NO:3)GQLKHLEQQEG-NH_2, a peptide derived from the repeat motif found in the keratinocyte protein involucrin, which is known to be an excellent substrate for TGase.

The acyl donor and acyl acceptor peptides of this invention can be separately conjugated or coupled with, for example, PEG. Solutions of such polymer-peptide conjugates rapidly form hydrogels in the presence of transglutaminase under physiological and/or appropriate reaction or end-use conditions. The hydrogels of this invention are adhesive, for example, comparable to type I collagen and guinea pig skin. For example, based on the results of substrate specificity studies, DOPA-FKG (acyl acceptor) and Ac-(SEQ ID NO:2)GQQQLG (acyl donor) were selected and separately coupled to a PEG to form PEG-peptide conjugates **1** and **2** shown in Figs. 7-8. The PEG-peptide conjugates were analyzed and purified by RP-HPLC, and their structures confirmed by MALDI TOF-MS analysis.

JDK 1/29

On page 12, please amend the first full paragraph as follows:

Materials. Unless otherwise provided herein: 4-armed PEG with amine end groups (M_w = 10k) was purchased from SunBio PEG Shop. Hydroxyl terminated PEG (M_w = 4k) and Sephadex® LH-20 were purchased from Fluka. Rink amide resin (0.6 mmol/g), H-Gly-2-ClTrt resin (0.6 mmol/g), DCC, BOP, HOBt, DIEA, NMP, and protected amino acids were purchased from Advanced ChemTech, KY, USA. Transglutaminase from guinea pig liver, Boc-L-Lys(Boc)-OH, and *N*-Boc-L-DOPA dicyclohexylammonium salt was purchased from Sigma Chemical Company (St. Louis, MO). Acetonitrile was from Burdick and Jackson. TFA was from J. T. Baker. Triethylamine (Et_3N), piperidine and water (HPLC grade) monodansyl cadaverine were purchased from Aldrich Chemical Company (Milwaukee, WI). Dansyl-ε-aminocaproyl-Gln-Gln-Ile-Val (dns-ε-aca-(SEQ ID NO:1)QQIV) was a gift from Dr. Laszlo Lorand of Northwestern University Medical School and prepared using well-known synthetic techniques.

On page 13, please amend paragraph 1 of Example 2 as follows:

Example 2

Substrate Specificity. Enzymatic reactions were carried out in 50 mM Tris-HCl buffer containing 5 mM $CaCl_2$, 5 mM DTT, 1 mM EDTA, 0.5 mM dns-ε-aca-(SEQ ID NO:1)QQIV (or 1 mM monodansyl cadaverine for glutamine peptides), varying amounts of a peptide substrate, and purified guinea pig liver transglutaminase (Sigma) (0.01-0.08 U/ml) in a total volume of 200 µl of reaction mixture at pH 8.0, 25°C. At predetermined time intervals, aliquots of the reaction mixture were removed and added to an equal volume of 1% trifluoroacetic acid (TFA) in water or 1% TFA in water containing 0.2 mM $^{\varepsilon}$N-dansyl-L-lysine (Sigma) as the internal standard to terminate the reaction. All reaction products were characterized by LC-ESI/MS (Table 3) and quantitatively analyzed by RP-HPLC. Representative results for a few select peptides are shown in